**BALANCED SCORECARD ANALYSIS FOR THE ELECTRIC VEHICLE INDUSTRY**

**Introduction**

A balanced scorecard analysis evaluates the performance of the industry in terms of four perspectives which include customer analysis, financial analysis, internal analysis and learning and growth perspectives. This report is going to introduce a comprehensive scorecard analysis of the electric vehicle industry on the basis of five performance dimensions that include speed, flexibility, quality, cost and dependability. The report is going to include the opportunities and challenges for the industry to analyse the flexibility of the industry. It is also going to evaluate the internal and external environment of the industry to understand its dependability. Furthermore, the report is going to concentrate on the strategic contribution of different factors of the industry to its business environment and its contribution to the society and workplace. Lastly, it is going to develop some strategies for the success of the industry and its transformation plan.

**Opportunities for the industry**

The electric vehicle industry has many opportunities in terms of its growth in the market. The opportunities can include the key factors of the electric vehicle industry for success. The key factors of the electric vehicle industry include its availability, convenience and reliability (Beaudet *et al*., 2020). The key factor, convenience has helped the industry to get many opportunities as it determines to make the life of the consumers more convenient. The electric vehicle industry provides a charging facility to its customers which helps them to have a convenient journey without a thought of other respective conditions. Apart from the convenience, it has a growth opportunity for its availability which also provides a helpful solution to its customers. The availability of the electric vehicle industry benefits it to become the monopoly market in different aspects. It also gets the opportunity with its battery recycling business and battery swapping technology (Lutsey *et al*., 2018). Battery swapping technology is an innovative development by the electric vehicle industry which provides the industry a great opportunity for its growth in the market. The battery swapping facility also provides its customers with a sense of availability which impacts its relationship with potential customers. On the other hand, the battery recycling process is another reason behind its huge opportunity in the future market. The battery recycling process gives its customers a sense of cost-effectiveness as well as a sense of reliability. The opportunities of the electric vehicle industry are based on the innovative solutions that have been provided by the industry. Its creative approach generated a huge marketplace for the growth of the industry.

**Challenges for the industry**

Apart from the various types of feasible, as well as acceptable features associated with the growth of the electric vehicles industry, there can be some challenges mentioned in the same context. There can be a mention of a challenge related to the batteries which are being used in the vehicles. The range of the batteries of an electric vehicle is limited to a certain extent. Electric vehicles are supposed to be able to run to a notable range, although there is a demand regarding the development of the range to a further mark. Apart from this, there can be another problem related to the time for charging the batteries to their fullest. It takes much time to recharge the batteries of electric vehicles. This can be cunted as one of the major problems to the electric vehicle industry, as there is not much time for every individual in the modern dynamic world. There can also be a mention of the cost of the batteries. The larger the batteries become, the larger the number of costs become. The heavy weight can also be an important point of challenge for the development of the electric vehicles industry (Sanguesa *et al.,* 2021). Apart from the mentioned problems related to the internal prospects of an electric vehicle, there can be a mention of the various challenges related to the designs and other devices required for the vehicles. The usage of a power semiconductor device can be counted as a problem for the development of the electric vehicle industry, as they may not be available for large commercial use. Apart from this, there can be a mention of the high power density modules. These modules are also not properly available in the market for large commercial use. This can also be coined as one of the major challenges for the development of the electric vehicle manufacturing industry (Husain *et al.,* 2021).

**Internal environment of the industry**

The electric vehicle industry provides a diverse internal environment to its employees. The diverse environment of the electric vehicle industry helps its businesses to have an effective marketplace in the long run. Electric vehicles are converted in the most sustainable way which needs an exclusive methodology to attract its customers (Preetha and Poornachandran, 2019). The development of an electric vehicle needs innovative technologies along with educated teams to work with. The efficient team members of the industry have helped it to have strong management for the industry. Apart from the efficient team members, the electric vehicle industry needs some advanced technologies to generate recyclable batteries and powerful batteries for vehicles. The innovative and advanced technologies of the electric vehicle industry help the industry to have a strong internal environment among the industry. It also helps the industry to produce better outcomes for the betterment of the industry.

The internal factors of any industry or business include some criteria factors such as employees, technologies, leadership quality of the management, and effective strategy of the management and its stakeholders (Mills and MacGill, 2018). The electric vehicle industry gets the benefit of advanced technologies that need efficient employees to work on the project. It helps the industry to have a management with less conflict that impacts its internal environment. Efficient employees tend to commit to the work for the benefit of the industry and they contribute to the industry to provide the desired goal by the management. Advanced technology is another factor for the better internal environment of the industry. The electric vehicle industry needs to have advanced technologies as it needs to do the recycling process for the generation of its batteries. Advanced technologies help the industry to have a better approach for the stakeholders of the business. It also helps the industry to accomplish its goals and objectives within a limited time period. Apart from the above aspects, leadership quality also contributes to a better internal environment of any business. Strategic and effective leaders are the person who manages the employees as well as motivates them to develop a better plan for the business (Kumar and Alok, 2020). They also help the business to get strong management without any conflict between the employees.

An effective strategy for the business is another aspect of a better internal environment in any industry. An effective strategy contributes to the management of the industry and it helps to provide a better strategic plan for the business. Strong management helps the industry to develop its product in the market as well as helps it to have a better communication plan for the employees (Deb *et al*., 2018). Moreover, stakeholders are another important aspect of the internal growth of an industry. Stakeholders provide financial support to the business to develop its plan for the product. They also become strong evidence for the establishment of any business. The electric vehicle industry has powerful internal support with the help of these important aspects.

**External environment of the industry**

The external environment of any industry depends on different aspects such as environmental, ethical, global, economic and technological factors (Shaukat *et al*., 2018). The electric vehicle industry contributes to the environmental factors with its sustainable approach towards recycling and environmental care. The electric vehicle industry aims to impact positively on the global environment with its less carbon emission approach. Again, its recyclable batteries contribute to the betterment of the global environment of the society. The electric vehicle industry contributes to ethical factors by following proper rules for the development of its products. The industry focuses on the ethical factors to maintain the legal aspects of the external factors.

The industry contributes to the global factors by providing positive support towards the global environment. The global environment is causing loss calamity by the excessive usage of negative products that emit an excessive level of carbon (Kavanagh *et al*., 2018). It also causes global warming which contributes to excessive heat exposure all over the world. The electric vehicle industry contributes to positive changes in the environment by less carbon emission and recycling facilities which helps the industry to have powerful external support in terms of global factors. Moreover, the industry contributes to the economic factors by owing strong financial support and effective stakeholder management. Stakeholders and investors are the backbone of financial support in an industry and the electric vehicle industry achieves it with a strong plan for financial management (Hardman *et al*., 2018). Again, the electric vehicle industry contributes to the technological factor of the business environment by having advanced technologies for the development of the business. Advanced technologies help the business to achieve its objectives within a limited time period and with better efficiency. It also helps the business to gain better support in terms of the financial aspect with the stakeholders of any project in the industry.

**Strategic contribution to the business environment**

***Stakeholder groups***

Stakeholders groups contribute strong support towards the internal and external business environment (Jenn *et al*., 2018). Its contribution to the internal business environment helps the business to gain strong management with financial support and its contribution to the external business environment helps the business to gain strong financial support. Stakeholders groups provide the development plan for the electric vehicle industry an assurance to expand its product in the market.

***Network***

The network is another important aspect of the electric vehicle industry as it contributes support towards the internal environment of the industry. The network recommends the distribution channel of the business in terms of delivering the product to its customers. An effective network can help the business to reach its target audience in the marketplace (Bouchard *et al*., 2020). The electric vehicle industry has a strong distribution channel network which helps the industry to expand its position in the market.

***Leadership practices***

Leadership practices refer to the effectiveness of the managerial leadership plan which contributes to the internal environment in the industry (Zhou *et al*., 2018). It helps the management of the business in resolving any kind of conflict during the agendas with its effectiveness for the business. It also provides motivation to the employees to accomplish the goals of the industry within a limited timeline.

***Communities of practice***

Communities of practices refer to an authority that provides legal support to the industry (Mehmood *et al*., 2018). It contributes to the external environment of the industry by providing legal support to the business. The electric vehicle industry has a powerful community of practices to have powerful legal support in its business environment.

**Contribution to Society and the Workplace**

***Employability management***

Apart from developing the business of the electric vehicle manufacturing companies, they also share a contribution towards the welfare of society in an active and effective manner. The development of the concerned society is considered to be a part of the Corporate Social Responsibilities taken up by the various corporate companies and other organisations. In this context, the electric vehicle manufacturing industries have targeted the prospects related to the employment of the unemployed people in society, especially the unemployed youth in an appropriate manner. As the various parts of the electric vehicles seem to be complicated, they are supposed to require a different type of expertise for the development of the same. Due to this reason, the concerned vehicle industry is taking this initiative for the development of society.

***Utilisation of personal development skills***

The vehicle manufacturing industry has witnessed a revolution through the implementation of electricity-powered vehicles. This revolution demands the utmost expertise of the various types of engineers associated with the development of electric vehicles. Due to this reason, the electric vehicle manufacturing industry is offering scope to develop personal, as well as professional skills for the development of themselves in an effective manner. There are some criteria for getting employment in the concerned industry. This can be helpful for the development of personal skills in an effective, as well as professional manner.

**Strategies for success and Transformation plan**

In the competitive, global and ever-changing economy, a particular strategic transformation is very essential. It is needed for organisations for surviving in the market amid the pressure of consumer preferences market trends etc. Many organisations have taken several approaches in order to transform their business most of their approaches were in vain. In this context, thus a very effective strategic transformation is required for maintaining the sustainability of the organisations. In the present context, in order to make an effective strategy for the transformation of the electric vehicle industry several factors can be taken into consideration such as digital, marketing, data, leadership and technology factors can be taken into consideration (emeritus.org, 2023). The electric vehicle industry must adopt new technological inventions for transformed their industry digitally. The company also focuses on their electric vehicles marketing and selling infrastructure for its marketing transformation. The electric vehicle industry must be taken into consideration the new data sciences in order to gain the necessary data for its enhancement in the field of technology. The industry also adopts the transformational leadership model for gaining success and also to control or manage its employees in an effective way. The industry has to pay attention to climate change and its impact on its business and the discussed plan must be executed in its field to gain sustainability in the market.

A transformational plan for this electric industry must be developed in the following way -

First of all the current market status of electric vehicles will be analysed - the demand for the product and the current competitive value of the product. After that, the opportunities of the product will be analysed in the market. In this context, electric vehicles have an extreme demand in the market for their zero-emission value. The goal will be fixed as per the demand such the company will achieve the target of the zero-emission car in the globally popular countries in the year 2050. The company will focus their some issue like its high price which is quite unaffordable for middle-class people. The companies can think about the merger and can work together for better innovation in the market. Above all, after the implementation of the plan the plan will be reviewed for further initiatives.

**Conclusion**

In the present context, the balanced scorecard of the electric vehicles company has been analysed very clearly in order to understand the present market status of electric vehicles. The transformation of the business has been taken into consideration in order to increase the growth of the industry in the present competitive industry. The transformational strategy that has been mentioned in the above part will be very effective in reaching success in the global electric vehicles market. In the global market as the electric vehicle is very popular for its presence of zero-emission the industry has the opportunity to stay effective in the market by following the strategic transformation. The transformation is required essentially for the survival of the eclectic vehicle industry and also to stay sustainable in the market field. The best opportunities for the industry must be taken into consideration for effective transformation and after the transformation, the data will be collected for further improvement in the specific sector.

**References**

Sanguesa, J.A., Torres-Sanz, V., Garrido, P., Martinez, F.J. and Marquez-Barja, J.M., 2021. A review on electric vehicles: Technologies and challenges. *Smart Cities*, *4*(1), pp.372-404. <https://www.mdpi.com/2624-6511/4/1/22/pdf>

Husain, I., Ozpineci, B., Islam, M.S., Gurpinar, E., Su, G.J., Yu, W., Chowdhury, S., Xue, L., Rahman, D. and Sahu, R., 2021. Electric drive technology trends, challenges, and opportunities for future electric vehicles. *Proceedings of the IEEE*, *109*(6), pp.1039-1059. <https://www.osti.gov/pages/servlets/purl/1763457>

Beaudet, A., Larouche, F., Amouzegar, K., Bouchard, P. and Zaghib, K., 2020. Key challenges and opportunities for recycling electric vehicle battery materials. *Sustainability*, *12*(14), p.5837.

Lutsey, N., Grant, M., Wappelhorst, S. and Zhou, H., 2018, May. Power play: How governments are spurring the electric vehicle industry. Washington, DC, USA: ICCT.

Preetha, P.K. and Poornachandran, P., 2019, February. Electric vehicle scenario in India: roadmap, challenges and opportunities. In *2019 IEEE international conference on electrical, computer and communication technologies (ICECCT)* (pp. 1-7). IEEE.

Mills, G. and MacGill, I., 2018. Assessing electric vehicle storage, flexibility, and distributed energy resource potential. *Journal of Energy Storage*, *17*, pp.357-366.

Kumar, R.R. and Alok, K., 2020. Adoption of electric vehicle: A literature review and prospects for sustainability. *Journal of Cleaner Production*, *253*, p.119911.

Shaukat, N., Khan, B., Ali, S.M., Mehmood, C.A., Khan, J., Farid, U., Majid, M., Anwar, S.M., Jawad, M. and Ullah, Z., 2018. A survey on electric vehicle transportation within smart grid system. *Renewable and Sustainable Energy Reviews*, *81*, pp.1329-1349.

Kavanagh, L., Keohane, J., Garcia Cabellos, G., Lloyd, A. and Cleary, J., 2018. Global lithium sources—industrial use and future in the electric vehicle industry: a review. *Resources*, *7*(3), p.57.

Hardman, S., Jenn, A., Tal, G., Axsen, J., Beard, G., Daina, N., Figenbaum, E., Jakobsson, N., Jochem, P., Kinnear, N. and Plötz, P., 2018. A review of consumer preferences of and interactions with electric vehicle charging infrastructure. *Transportation Research Part D: Transport and Environment*, *62*, pp.508-523.

emeritus.org (2023) *Everything you need to know about strategic transformation*, *Emeritus Online Courses*. Available at: <https://emeritus.org/blog/strategic-transformation/> (Accessed: April 29, 2023).